CHAPTER V

CONCLUSION AND RECOMMENDATION

5.1 Conclusion

From the beginning, the objective of this research is to design and evaluate interactive birdwatching signage, specifically the birdwatching guidebook as part of the revitalization efforts at Lembur Mangrove Patikang, a mangrove ecotourism site with strong potential for educational development. Throughout the PRO-STEP Research and Technology program, this study adopted the Human-Centered Design (HCD) framework, progressing through the phases of Inspiration, Ideation, and Implementation. This approach ensured that every design decision responded directly to user needs, environmental context, and on-site insights.

During the Inspiration phase, the researcher conducted field observations, stakeholder discussions, and environmental analysis to identify challenges and opportunities for enhancing the site's educational capacity. The Ideation phase involved conceptualizing various media, developing design directions, and iterating prototypes collaboratively with the team. In the Implementation phase, the developed guidebook was tested through live prototyping sessions, where participants interacted freely with the material before completing structured questionnaires.

Lastly, while the User Engagement Scale–Short Form (UES-SF) score of 4.4 out of 5 indicates a high baseline of success, the evaluation exposed specific functional limitations. The lower scores in Focused Attention and Perceived Usability suggest that the current content strategy still needs further improvement to fully absorb the user. Non-UES findings validate this, pointing to a possible disconnect between the visuals and the complex textual information which hindered the practicality of the guidebook for casual learners. Consequently, the study concludes that mere aesthetic quality is insufficient; future iterations must prioritize simplifying technical content and integrating dynamic features to bridge the gap between visual appeal and actual usability.

5.2 Recommendation

After completing the PRO-STEP Research and Technology program, the researcher gained a lot of experience in designing environmental and educative media, specifically birdwatching signage and a birdwatching guidebook, within the context of mangrove ecotourism development at Lembur Mangrove Patikang. The process provided valuable insights into applying the Human-Centered Design approach, conducting field-based research, and iterating prototypes based on real user feedback. The following recommendations are offered for readers, especially future researchers who plan to undertake projects similar to the PRO-STEP program or other media-design projects within environmental education or edutourism contexts:

(1) Begin by building a strong understanding of the local context, such as doing early engagement with site managers and surrounding community before conducting the research to ensure that the media designed remains relevant to the local culture and habit.
(2) Prototype early and test directly with real users
(3) Maintain consistent communication and collaboration with stakeholders.
(4) Conduct on-site observations before making any design decisions, including observing user behaviour, checking out the site layout, environmental conditions (lighting, weather, etc.)

These recommendations are intended to guide future students, researchers, or designers who will work on edutourism media development or similar PRO-STEP research projects, in hope to ease them while navigating the process more effectively and creating outputs that are both meaningful and impactful.